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09/973,443	10/09/2001	Craig David Johnson	68.0191	5949

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,443

Applicant(s)

JOHNSON, CRAIG DAVID

Examiner

Jennifer H Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,19,21-24 and 26-29 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-18 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bode et al. (US 2002/0157837).

*Regarding claim 10:* Bode discloses an apparatus for completing a wellbore. The apparatus includes the following features:

- A production tubular (18) comprising screen sections (see paragraph 0063) capable of communicating fluid between the reservoir and the interior of the production tubular.

The examiner notes that it has been held that the recitation that an element is “capable of” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

- Each of the sections includes a flow restrictor (54-56, see paragraph 0039) capable of imposing a known restriction on the communication of fluid thereby regulating the pressure profile along the production zone. *It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure*

*profile of the screen.* The flow restriction through at least one screen section can vary from that of at least one other section (see paragraph 0039).

- Bode discloses using a gravel/sand packed wellbore screen.

*Regarding claim 11:* As seen in Figure 3, the production tubing is located in a horizontal wellbore.

3. Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by White et al. (US 2,083,625).

*Regarding claim 13:* White et al. discloses a wellbore completion that includes a gravel pack creating a progressively decreasing substantially radial flow restriction along its length (Figure 7).

*Regarding claim 14:* The completion includes a sand screen 35 and 36 that is capable of imposing a restriction on the communication of fluid through the sand screen.

4. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by West (US 2,597,554).

West discloses a gravel pack completion method. The completion includes the following features:

- A first (31) and second (27) gravel pack sections located in a wellbore where each section is adapted to allow wellbore fluid to be produced there through. *It should be noted that the gravel pack sections would inherently impose a predetermined radial flow restriction upon the production fluid flowing through the gravel pack since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow rate through the section.*
- The first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section “31” has a greater

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permeability than “27” thus would impose a different flow restriction.)

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 2,597,554) in view of Daneshy et al. (US 5,375,661).

*Regarding claim 1:* West discloses a gravel pack completion method. The completion includes the following features:

- A first (31) and second (27) gravel pack sections located in a wellbore where each section is adapted to allow wellbore fluid to be produced there through. *It should be noted that the gravel pack sections would inherently impose a predetermined radial flow restriction upon the production fluid flowing through the gravel pack since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow rate through the section.*

It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

- The first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section “31” has a greater permeability than “27” thus would impose a different flow restriction.)

West discloses all of the limitations of the above claims except for the different areas of flow restrictions being in the heel and toe of a horizontal wellbore.

Daneshy et al. discloses a well completion method that involves gravel packing a horizontal wellbore. The horizontal wellbore includes multiple individual sections of gravel packing that have different radial flow restrictions.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West to be used in a horizontal wellbore where the heel and toe of that wellbore had different flow restrictions as taught by Daneshy et al. in order to have been able to control the pressure differential between the heel and toe of the horizontal wellbore thus control the draw on the formation of interest.

*Regarding claim 2:* As recited in column 6, line 28-column 7, line 15, a graded gravel material is used for the different sections of the gravel pack. *It should be noted that the gravel pack sections would inherently have a permeability within a predetermined range since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the permeability of the section.*

*Regarding claim 7:* West discloses a packer (41) attached to the sand screen.

*Regarding claim 8:* As seen in Figure 1, the completion of West includes production tubing (40) located within a screen (16).

*Regarding claim 9:* It should be noted that the gravel pack sections would inherently have a predetermined range of flow conductivities since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow conductivity through the section.

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 2,597,554) in view of Daneshy et al. (US 5,375,661) as applied to claim 1 above, and further in view of Bode et al. (US 2002/0157837).

*Regarding claim 4:* As seen in Figure 1, West discloses a wellbore screen (16) used in conjunction with the gravel pack completion method. However, West and Daneshy et al. does not disclose a plurality of flow restricting sections that are capable of

imposing a predetermined flow restriction upon the fluid production flowing through the screen sections.

Bode teaches a gravel pack completion method similar to that of West. The completion of Bode further includes a plurality of flow restrictors (54-56, see paragraph 0039) that can be used to control the fluid flow through wellbore screens used in a gravel pack operation (see paragraph 0063).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West in view of Daneshy et al. to include the plurality of controllable flow restrictors located within wellbore screens as taught by Bode in order to have been able to control the fluid loss of the gravel slurry when being injected into the wellbore. One would have been motivated to make such a combination because a more uniform packing of the well screens and wellbore would have been obtained, as taught by Bode.

*Regarding claim 5:* The plurality of flow restrictors of Bode would be capable of imposing a flow restriction through the screen thereby regulating the pressure profile along the screen length. *It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.*

*Regarding claim 6:* Bode discloses using a gravel and sand packed wellbore screen.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bode et al. (US 2002/0157837) in view of White et al. (US 2,083,625).

Bode et al. discloses using the above-described apparatus in a gravel pack operation (paragraph 0063).

Bode et al. discloses all of the limitations of the above claims except for the gravel pack having a progressively decreasing substantially radial flow restriction along its length.

White et al. discloses a wellbore completion that is similar to that of Bode et al. White et al. further teaches that includes a gravel pack creating a progressively decreasing substantially radial flow restriction along its length (Figure 7).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Bode et al. such that the gravel pack had a progressively decreasing substantially radial flow restriction along its length as taught by White et al. in order to have decreased the draw, i.e. stress, on the formation. An increase in flow restriction progressing up the wellbore have increased the overall pressure on the formation due to the decreasing flow rate through the upper flow restrictions thus reducing any suction imposed on the formation.

9. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 2,597,554) in view of Bode et al. (US 2002/0157837).

*Regarding claim 16:* As seen in Figure 1, West discloses a wellbore screen (16) used in conjunction with the gravel pack completion method. However, West does not disclose a plurality of flow restricting sections that are capable of imposing a predetermined flow restriction upon the fluid production flowing through the screen sections.

Bode teaches a gravel pack completion method similar to that of West. The completion of Bode further includes a plurality of flow restrictors (54-56, see paragraph 0039) that can be used to control the fluid flow through wellbore screens used in a gravel pack operation (see paragraph 0063).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West to include the plurality of controllable flow restrictors located within wellbore screens as taught by Bode in order to have been able to control the fluid loss of the gravel slurry when being injected into the wellbore. One would have been motivated to make such a combination because a more uniform packing of the well screens and wellbore would have been obtained, as taught by Bode.



*Regarding claim 17:* The plurality of flow restrictors of Bode would be capable of imposing a flow restriction through the screen thereby regulating the pressure profile along the screen length. *It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.*

*Regarding claim 18:* As seen in Figure 3 of Bode, the wellbore screens are located in a horizontal wellbore that includes a heel and toe end.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 2,597,554) in view of Bode et al. (US 2002/0157837) and Daneshy et al. (US 5,375,661).

West discloses a gravel pack completion method where the method involves the placing a gravel pack in a wellbore (see Figure 1) where the gravel pack includes a first (31) and second (27) section. Each of the sections is adapted to allow wellbore fluid to be produced there through and the first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section "31" has a greater permeability than "27" thus would impose a different flow restriction.)

As seen in Figure 1, West discloses a wellbore screen (16) used in conjunction with the gravel pack completion method. However, West does not disclose a plurality of flow restricting sections that are capable of imposing a predetermined flow restriction upon the fluid production flowing through the screen sections.

Bode teaches a gravel pack completion method similar to that of West. The completion of Bode further includes a plurality of flow restrictors (54-56, see paragraph 0039) that can be used to control the fluid flow through wellbore screens used in a gravel pack operation (see paragraph 0063). On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Bode could be any of the above types of screens.

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It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West to include the plurality of controllable flow restrictors located within wellbore screens as taught by Bode in order to have been able to control the fluid loss of the gravel slurry when being injected into the wellbore. One would have been motivated to make such a combination because a more uniform packing of the well screens and wellbore would have been obtained, as taught by Bode.

Further, West discloses all of the limitations of the above claims except for the different areas of flow restrictions being in the heel and toe of a horizontal wellbore.

Daneshy et al. discloses a well completion method that involves gravel packing a horizontal wellbore. The horizontal wellbore includes multiple individual sections of gravel packing that have different radial flow restrictions.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West in view of Bode et al. to be used in a horizontal wellbore where the heel and toe of that wellbore had different flow restrictions as taught by Daneshy et al. in order to have been able to control the pressure differential between the heel and toe of the horizontal wellbore thus control the draw on the formation of interest.

#### ***Allowable Subject Matter***

11. Claims 3, 19, 21-24, and 26-29 are allowed.

#### ***Response to Arguments***

12. Applicant's arguments with respect to claims 1-9, 12-18, and 25 have been considered but are moot in view of the new ground(s) of rejection.
13. The examiner notes that applicant has indicated that claim 15 depends from claim 13, however, the record of the instant application shows that claim 15 is an independent claim.

Applicant has not argued the rejection of claim 15 on the merits of the prior art nor has claim 15 been amended, therefore, the previous rejection of claim 15 has been repeated.

14. Applicant's arguments regarding claims 10 and 11, filed 26 April 2004 have been fully considered but they are not persuasive.

Applicant has argued that the rejection of claims 10 and 11 is not proper because the examiner has used two references in a rejection made under 35 USC 102(e). Firstly, the examiner notes that this rejection has been given in multiple Office Actions and applicant has not previously argued the supposed use of two references. More to the point, however, the examiner has **not** used two references to reject claims 10 and 11 under 35 USC 102(e); Bode et al. was, and is, the only reference being applied against the claims. Bode et al. discloses using a flow restriction element that can be a sand packed well screen (paragraph 0063); the instant application was cited merely as evidence that the remainder of the flow restriction elements cited were equivalent to that taught by Bode et al. and that applicant agreed to this point. For the sake of clarity, and because the reference to the instant application is not necessary, the recitation of the passage of the instant application has been removed from the rejection of claims 10 and 11.

### **Conclusion**

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

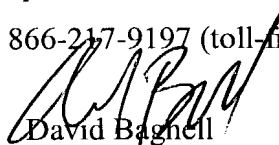
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David Bagnell  
Supervisor Patent Examiner  
Art Unit 3672

JHG

June 15, 2004